

EXW/8/10/12 SUBWOOFER

CONGRATULATIONS! You have chosen a superior product for reproducing true high fidelity in the car. This precision component, when properly installed, is capable of audiophile-quality performance. The EXC 8,10 and 12 woofers are well suited for sealed, vented, and sealed band-pass enclosures. They also work well in infinite baffle installations at one-half the power rating.

Should your woofer ever require service or replacement, recording the information below for your own records will help protect your investment.

Model Number: _____

Serial Number: _____

Dealer's Name: _____

Date of Purchase: _____

Installation Shop: _____

Installation Date: _____

EXW/8/10/12

SUBWOOFERS

OWNER'S MANUAL AND INSTALLATION GUIDE

SOUNDSTREAM[®]
T E C H N O L O G I E S

DESIGN FEATURES

- Installation Flexibility - The EXC woofers perform well in smaller-sized sealed, vented and band-pass enclosures. Regardless of the application, the EXC woofers perform!
- Heavy Cast Aluminum Frame provides extra rigidity and damping with Silver Powder Coat Finish for durability and scuff resistance.
- Ultra-High power handling Voice Coil with Black Anodized Aluminum Former increases power handling and performance. Aerospace grade adhesives and materials insure longevity and high performance.
- High Excursion Design - The EXC woofer offers an Extra Long Voice Coil for extra high output. New Ultra-Excursion Surround enables this.
- Computer Numerically Controlled (CNC) machined magnet plates and pole piece precisely focus the magnetic energy for optimum performance. High Emissivity Coating for improved power handling and lower distortion.
- Vented Pole Piece for greater voice coil cooling.
- Rubber Magnet Cover for added durability and exceptional appearance.
- Custom-designed High Strength Spider controls the long travel cone assembly.
- Gold Plated 8 Gauge Terminals ensure consistently outstanding connectivity for cable hook up.
- Designed and Manufactured in the U.S.A.

SPECIFICATIONS & THIELE/SMALL PARAMETERS

	EXW/8	EXW/10	EXW/12
Freq. Response	29-500	25-500	22-500
Sens. 2.83v/11 m	87.91	89.62	90.5
Impedance (nom. Z)	4	4	4
Rated Program Power	200	300	500
Fs	34	30	27
Qts	0.421	0.332	0.403
Qms	7.282	12.87	11.61
Qes	0.45	0.34	0.42
Vas (ft3)	0.59	1.12	3.14
Vas (liters)	16.7	31.6	89.0
Vas (m3)	0.017	0.032	0.089
Cms (um/N)	266.8	205.0	187.8
DCR (ohms)	2.91	3.2	3.18
Levc (mH) @ 1 KHz	0.6	0.75	0.75
BL (Tesla m)	10.63	15.77	14.84
Sd (in ²)	32.6	51.2	82.2
Sd (m ²)	0.021	0.033	0.053
Sd (cm ²)	210	330	530
X max; one way (linear mm)	10.41	12.95	12.95
X max; one way (peak mm)	29.21	31.75	31.75
Vd (linear cm ³)	218.61	427.35	686.35
Vd (peak cm ³)	613.41	1047.45	1682.75
Vd (linear m ³)	.00021861	.00042735	.00068635
Vd (peak m ³)	.00061341	.00104745	.00168675
Mms (grams)	80.3	135.2	182.2
Magnet Assembly (oz)	128	224	224
Magnet Weight (oz)	44	84	84
Vf (volume of frame)	100 in ³	180 in ³	200 in ³
Coil length (mm)	31	36	36
Coil diameter (in)	2	2.5	2.5

There are several different enclosure designs for different applications. The EXC subwoofers work very well in all the following enclosure designs. It is up to you to select the specific enclosure that will work the best for your particular application.

Infinite Baffle

Infinite baffle is the simplest type of subwoofer installation. In this type of installation, the woofer(s) is mounted to a baffle, which is then mounted to either the rear deck or back seat of the vehicle. The best results are achieved when the trunk area is virtually airtight and isolated from the passenger compartment.

Pros

- Excellent low frequency extension
- Excellent transient response
- Uses almost no trunk space

Cons

- Lower power handling
- Low to medium efficiency

Sealed Enclosure

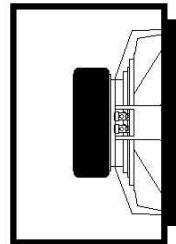
Sealed enclosures are relatively simple to build and install, as all that is required is an airtight box. The larger the sealed enclosure, the more the performance resembles that of an infinite baffle installation.

Pros

- Very good low frequency extension
- Very good transient response
- High power handling

Cons

- Medium efficiency



Vented Enclosure

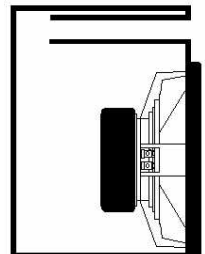
Vented enclosures use a sealed enclosure with a vent or port in the box which is tuned to resonate at a specific frequency.

Pros

- Good low frequency extension down to the tuning frequency
- High power handling down to the tuning frequency
- Higher output than sealed enclosures

Cons

- Low power handling below the tuning frequency
- Almost no output below the tuning frequency



Sealed Band-pass Enclosure

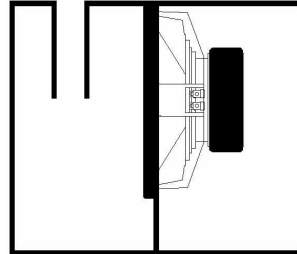
Sealed band-pass enclosures enclose both sides of the woofer(s). An airtight enclosure is built around the front and back of the woofer and one chamber is ported to a specific frequency.

Pros

- High power handling within the operating frequencies
- Very high output within the range of the operating frequencies

Cons

- Low power handling beyond the tuning frequency
- Poor to moderate transient response
- Poor low frequency extension

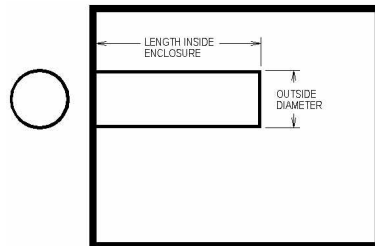


CALCULATING NET INTERNAL ENCLOSURE VOLUMES

When constructing any type of enclosure, you must be aware that the outside dimensions DO NOT represent the true (Net) volume inside. Such things as woofers, ports, thickness of enclosure material, dividing walls, and any internal bracing will reduce the total amount of the actual air space available. The following worksheet has been designed to provide you with the necessary steps to accurately calculate the absolute (Net) internal volume of any given enclosure.

Calculating Cylindrical Port Volume

1. Measure the outside diameter of the port and divide by 2 for the radius.
2. Square the radius and multiply by 3.14 (pi) to arrive at outside port area.
3. Multiply the area by the length of the port *inside* the enclosure for the port volume.



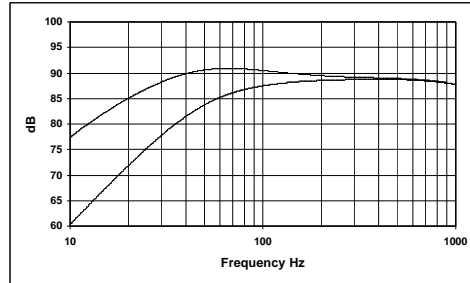
- Determine the dimensions of your enclosure.
- Be certain the box you have designed will fit into the location you have chosen. Sometimes making a cardboard box with the same outside dimensions is helpful.
- Use 3/4 inch thick Medium Density Fiberboard (MDF) or High Density Particleboard. It is preferable to cut the wood with a table saw to ensure straight, even joints. If a table saw is not available, a circular saw is acceptable.
- Use a "T" square to verify precise right angle gluing.
- Use a high quality wood glue and air nails or wood screws to assemble the enclosure. Elmer's® woodworker's glue and Weldwood® work well. To guarantee an airtight box, seal each inside joint with silicone sealant.
- For Sealed Enclosures, stuff the chamber with 50-75% filling (approximately 1.5 pounds per cubic foot) of fiberglass insulation or Dacron®.
- For Vented Enclosures, staple 1-inch thick fiberglass insulation or Dacron® to all walls of the enclosure except the baffle to which the woofer is mounted.
- Use the eight (8) wood screws or T-nuts and bolts to seal the woofer in the enclosure. Progressively tighten each of the bolts or screws to prevent warping the woofer frame.

Infinite Baffle

- Excellent performance for all types of music at moderate levels

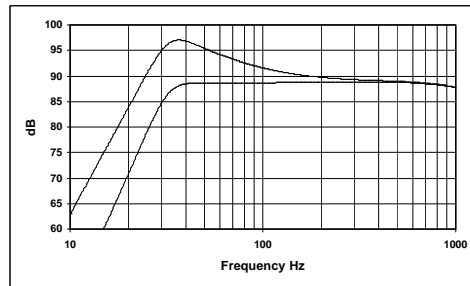
Sealed

- .5 ft³ Good overall enclosure.
Good for classical and jazz.



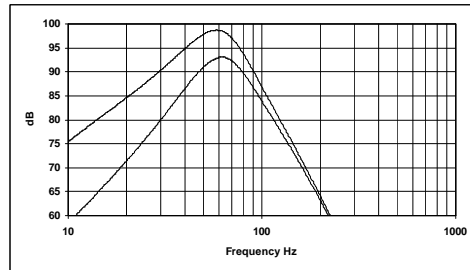
Vented

- .5 ft³ @ 33Hz (2" x 11.25" port) Good overall enclosure.



Sealed Bandpass

- Rear = 0.3 ft³ sealed
- Front = 0.3 ft³ @ 60 Hz (3" x 12.0" port) - Very high output, excellent for Rock or Rap.

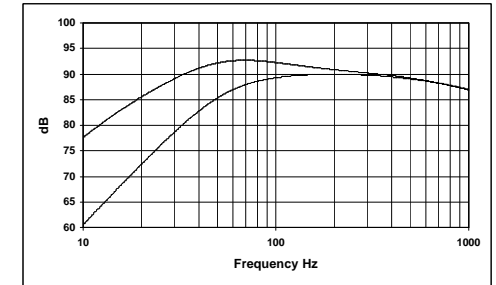


Infinite Baffle

- Excellent performance for all types of music at moderate levels

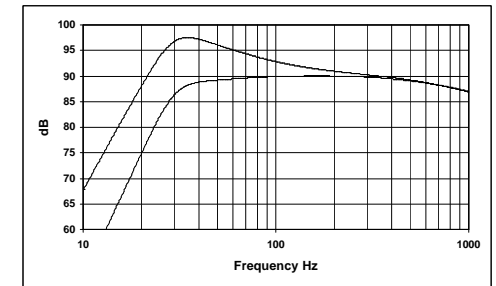
Sealed

- .5 ft³ Good overall enclosure.
Good for classical and jazz.



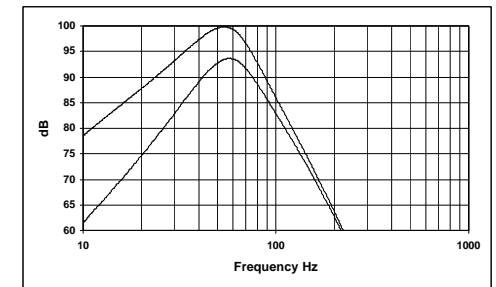
Vented

- .75 ft³ @ 30Hz (3" x 20.75" port) Good overall enclosure.



Sealed Bandpass

- Rear = 0.5 ft³ sealed
- Front = 0.5 ft³ @ 55 Hz (3" x 7.85" port) - Very high output, excellent for Rock or Rap.

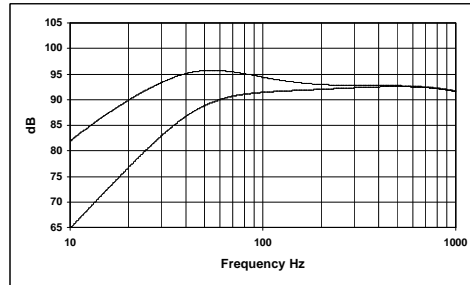


Infinite Baffle

- Excellent performance for all types of music at moderate levels

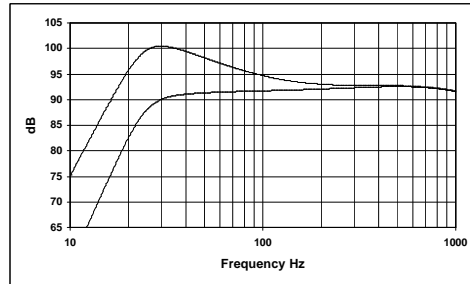
Sealed

- 1.25 ft³ *Good overall enclosure. Good for classical and jazz.*



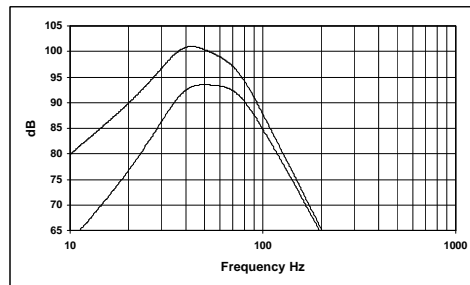
Vented

- 2.0 ft³ @ 25Hz (3" x 10.00" port) *Good overall enclosure.*



Sealed Bandpass

- Rear = 0.8 ft³ sealed
- Front = 0.8 ft³ @ 60 Hz (4" x 9.125" port) - Very high output, excellent for Rock or Rap.



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